APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/661,428	09/13/2000	Toshikazu Hori	21.1967/WMS	8410

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EXAMINER
LE, BRIAN Q

ART UNIT	PAPER NUMBER
2621	

DATE MAILED: 12/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/661,428	HORI ET AL.
	Examiner	Art Unit	
	Brian Q. Le	2623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 October 2005*.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

Response to Amendment and Arguments

1.   Applicant's amendment filed October 17, 2005, has been entered and made of record.

2.   The rejection of claims 1-20 under 35 U.S.C. 112, first paragraph is withdrawn.

3.   The objection of claims 1, 2 and 15-17 is withdrawn.

4.   Applicant's arguments with regard to claims 1-20 have been fully considered, but are not

considered persuasive because of the following reasons:

Regarding claim 1, the Applicant argues (page 16 of the Remarks) that Hotta's Reference

teaches the method of improving character recognition is based upon clustering of feature vector

of characters as elements and not based upon "the recognized characters of the respective

algorithms are non-coinciding for some corresponding same location of the text image and

coincide for other corresponding same locations of the text image,". The Examiner respectfully

disagrees, Hotta's reference not only teaches the method of improving character recognition

based upon cluster of feature vectors of characters (as indicated by the Applicant) but also based

upon the recognized characters (FIG. 29 and column 29, lines 20-29). Perhaps, the invention of

the application is different from the reference. However, the claiming language is not narrow

enough or explicitly distinguished the invention from Hotta's Reference. Furthermore, Hotta's

Reference teaches both the character recognition is based upon clustering of feature vector of

characters and based upon the recognized characters. Therefore, Hotta's Reference can be used

to teach the limitation of character recognition based upon the recognized characters alone since

the limitation does not stated the exclusion of a character recognition method bases upon

clustering of feature vector of characters.

Also, the Applicant argues (top of page 17) that Hotta does not perform "extracting the locations" limitation. The Examiner points out that FIG. 18 and column 21, lines 5-60 teaches this broad limitation. Hotta teaches the extraction of the characters written on a document image. A feature vectors keeps track of the dimensions information associate with the characters. Thus when one skilled in the art extract characters, it is clear that the location of the characters are extracted as well in order the removed the characters from the image.

The Applicant further argues (page 17 of the Remarks) that Shirasaki's Reference does not teach the claimed limitation "the extracting the locations corresponding to the non-coinciding characters recognized by the respective recognitions.". However, the Examiner did not use Shirasaki's Reference but rather used Hotta's Reference to reject this limitation. Also, motivation of combining the references also clearly provided in the Office Action filed 05/17/2005.

Regarding claim 20, the Applicant argues that Arai's Reference does not teach the limitation "based on which recognition algorithm had a highest recognition evaluation for the respective characters" because the score is based upon a single recognition algorithm. The Examiner respectfully disagrees. If this concept can be done on a single recognition algorithm, it would have been obvious for one skilled in the art the process on other recognition algorithms. In addition, the Examiner does not use Arai's Reference to teach the multiple recognitions but only uses Arai's Reference to teach a concept of recognition algorithm had a highest recognition evaluation for the respective characters which is clearly explained in the Office Action filed 5/17/2005.

Thus, the rejections of all of the claims are maintained.

Claim Rejections - 35 USC § 102

5.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed
> in the United States before the invention by the applicant for patent or (2) a patent granted on an application for
> patent by another filed in the United States before the invention by the applicant for patent, except that an
> international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this
> subsection of an application filed in the United States only if the international application designated the United
> States and was published under Article 21(2) of such treaty in the English language.

6.   Claims 17-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Hotta U.S.

Patent No. 6,345,119.

Regarding claim 17, Hotta teaces a method for recognizing characters in a captured text

image, the method comprising:

Providing a first character recognition algorithm and a second character recognition

algorithm, where each character recognition outputs its own recognized characters, and where

the character recognition algorithms are capable of recognizing same character-images as

different recognized characters (please refer back to claim 2 for the teachings and explanation);

Output recognized characters (FIG. 16, element 28) by performing character recognition

(FIG. 16, element 23) on the captured text image with each character recognition algorithm; and

Identifying areas of the text of the captured image based on discrepancies (non-matching

recognition results) between respective outputs of the character recognition algorithms that

correspond to the areas (column 16, lines 55-60).

Referring to claim 18, Hotta teaches a method further comprising: when a user is editing

text of the text image location, directing the editing to the identified (column 11, lines 1-14).

Claim Rejections - 35 USC § 103

7.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8.   Claims 1-16 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hotta

U.S. Patent No. 6,345,119 and further in view of Shirasaki U.S. Patent No. 6,341,176.

Regarding to claim 1, Hotta teaches a character recognition device to recognize

characters in a captured text image (abstract) comprising:

A multiple recognition (multiple recognition programs) unit to perform character

recognition of the text image using at least two different character recognition algorithms (FIG.

4, boxes 9-11, and box 15), each algorithm producing its own recognized characters from the

same text image, where the recognized characters (cluster of characters) of the respective

algorithms are non-coinciding (not matching recognition results) for some corresponding same

locations of the text image and coincide (match recognition results) (the determine of whether or

not the recognition results match would include the matching and non-matching results) for other

corresponding same locations of the text image (FIG. 14, FIG. 27 and column 16, lines 55-60);

An extraction unit extracting the locations corresponding to the of non-coinciding

(misrecognized cluster of characters) characters recognized by the respective recognition

algorithms (FIG. 18, S26); and

An output device to output the amended non-coinciding results (column 7, lines 28-34 and FIG. 15, S19).

Hotta does not clearly indicate the teaching of an output device to designate the non-coinciding locations extracted by the extraction device and to output character recognition results for the text image. Shirasaki also teaches a character recognition method that corrects misrecognized characters (abstract) and outputs the non-coinciding characters (misrecognized characters) (FIG. 33, G6-G8) (column 2, lines 65-67 and column 16, lines 43-50) extracted by the extraction (FIG. 12, element 132). Modifying Hotta's method of recognizing and correcting misrecognized characters according to Shirasaki would able to further output and display the misrecognized character so that the operator can further selected the appropriate character. Also, it is a designer choice of whether to display the misrecognized characters to further verify the recognized characters by the operator. This would improve processing and therefore, it would have been obvious to one of the ordinary skill in the art to modify Hotta according to Shirasaki.

Regarding claim 2, as explained in claim 1, Hotta further teaches a first recognition device (first program module) to recognize the characters in the text image using a first character recognition method (one-character recognition) (FIG. 1, element 102); and a second recognition device (second program module) to recognize the characters in the text image using a second character recognition method different from the first character recognition method (personal handwriting characteristics processing) (FIG. 1, element 104);

For claims 3-4, as discussed in claim 1, since Shirasaki teaches the concept of recognize and output the non-coinciding results. It would be obvious that that output device would show the contrast (difference) between the text image and the character recognition result so that the

operator would be able to distinguish the misrecognized characters. For further elaboration, please refer to Shirasaki (FIG. 17, C6-C9 and FIG. 44).

Regarding claims 5-6, as discussed in claims 3-4, Shirasaki teaches a character recognition device further comprising:

A display having a display screen to display character recognition results (FIG. 44),

Wherein the output device to contrasts the text image and the character recognition results while displaying the character recognition results on the display screen, and displays a cursor in a display area of the character recognition results while display the text image in the format that designates the location (horizontal and vertical distance, X and Y) of the text image coordinated at the position of cursor (column 27, lines 1-37).

Referring to claims 7-8, Shirasaki further teaches a character recognition device further comprising an output device to output a symbol that do not coincide instead of the recognized characters (FIG. 4, FIG. 19, FIG. 35, and FIG. 40).

Regarding claims 9-10, Shirasaki discloses a character recognition device further comprising an output device to output the recognized characters with a high evaluation value for the non-coinciding locations that have the same number of recognized characters in an output format that is different from the output format of the non-coinciding locations (FIG. 43-44).

For claims 11-12, Shirasaki also teaches an output device to output the recognized characters of the non-coinciding locations selected using a prescribed standard (threshold value) (FIG. 9, A66) for the non-coincident locations with a different number of recognized characters in a format that is different from the output format for the non-coinciding locations

Regarding claims 13-14, Shirasaki further teaches a character recognition device further comprising an output device to output in a format indicating that the recognition results coincide but have a low recognition liability (level of uncertainty) (column 3, lines 1-26, 59-67 and column 4, lines 25-40).

For claims 15 and 16, please refer back the claims 1-2 for further explanation.

Regarding claim 19, Hotta discloses the output of recognized text of the text image. Hotta does not explicitly teach the display recognized text of the text image. Shirasaki further teaches a displaying means display recognized text of the text image (column 10, lines 9-15). Modifying Hotta's method of recognizing and correcting misrecognized characters according to Shirasaki would able to display the output of recognized text of the text image. This would improve processing and therefore, it would have been obvious to one of the ordinary skill in the art to modify Hotta according to Shirasaki.

10. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hotta U.S. Patent No. 6,345,119 and further in view of Arai et al. U.S. Patent No. 6,697,524.

Regarding claim 20, Hotta discloses the output of recognized text of the text image. Hotta does not disclose the displaying characters in the identified areas based on which recognition algorithm had a highest recognition evaluation for the respective characters. Arai teaches a character recognition process (FIG. 1, element 103-1) wherein it discloses the displaying characters (FIG. 1, element 103-4) in the identified areas based on which recognition algorithm had a highest recognition evaluation for the respective characters (column 18, lines 48-65). Modifying Hotta's method of recognizing and correcting misrecognized characters according to Arai would able to display the output of recognized text of the text image base on

the highest recognition evaluation. This would improve processing and therefore, it would have

been obvious to one of the ordinary skill in the art to modify Hotta according to Arai.

Conclusion

9.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing

date of this final action.

Contact Information

10.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Brian Q. Le whose telephone number is 571-272-7424. The

examiner can normally be reached on 8:30 A.M - 5:30 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Joseph Mancuso can be reached on 571-272-7695. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BL
December 7, 2005

SAMIR AHMED
PRIMARY EXAMINER